

A report on the archaeological survey for Rum Jungle Rehabilitation Project - Stage 2A

A report to the Department of Primary Industry &
Resources

by Karen Martin-Stone
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A report on the archaeological survey of DPIR's proposal for Rum Jungle Rehabilitation, Stage 2A

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1.0 Executive Summary

The Northern Territory Department of Primary Industry and Resources (DPIR) engaged Karen Martin-Stone, of In Depth Archaeology, to conduct an archaeological assessment of proposed disturbance areas associated with Stage 2A of the Rum Jungle rehabilitation project. The archaeological assessment includes archaeological survey, research, and ongoing stakeholder consultation. The archaeological survey was undertaken from 23-28 November 2018.

The survey recorded 16 Aboriginal objects, 3 Aboriginal places and 2 historical places, as defined under the NT *Heritage Act* 2011. Due to much of the survey being unavoidably scheduled early in the wet season, the survey outcomes were hampered by reduced ground surface visibility due to vegetation growth. It is highly probable that many of the recorded Aboriginal objects form part of larger sites (Aboriginal places), which could be more comprehensively recorded in better conditions. This report details the methodology and results, and makes recommendations for the management of heritage places and objects in accordance with the provisions of existing legislation.

1.1 Summary of Recommendations

The consultant makes the following recommendations:

1. That ongoing stakeholder consultation includes input from all Kungarakana and Warai people who wish to be engaged in the process, and that decision making occurs within an agreed Stakeholder Engagement framework and decision making process.
2. That the conditions of the Authority Certificate for sacred sites be upheld at all times.
3. That all appropriate access / permit procedures are followed for access to Finnis River Aboriginal Land Trust.
4. That a 100m conservation buffer be applied to all identified Aboriginal places and objects.
5. That erosion control measures be put in place for the palimpsest site, in consultation with Traditional Owners.
6. That the significant historical places and object (WWII sites and drill rig) be preserved.
7. That further archaeological survey in conditions of better visibility be conducted to properly document archaeological materials, where necessary.
8. That the Department provides a cultural heritage induction to all staff and contractors working in the project area, which includes types of heritage materials of which to be aware, and penalties for disturbance.
9. That if staff or contractors encounter suspected Aboriginal heritage materials during the course of works, disturbance of the area should cease and further advice be sought from the consultant and Traditional Owners.
10. That a Cultural Heritage Management Plan be developed to formalise the implementation of these recommendations.

2.0 Introduction

The Northern Territory Department of Primary Industry and Resources (DPIR) engaged Karen Martin-Stone, of In Depth Archaeology, to conduct an archaeological assessment of proposed disturbance areas associated with Stage 2A of the Rum Jungle rehabilitation project. The works are proposed across the former Rum Jungle mine lease, Mount Burton, Mount Fitch, Rum Jungle Creek South, and parts of the Finnis River Aboriginal Land Trust (FRALT). The project area is located approximately 105km south of Darwin (see Figure 1).

The archaeological assessment includes archaeological survey, research, and ongoing consultation with Traditional Owner groups, the Northern Land Council and DPIR, as the project design continues to be shaped according to technical and cultural feedback. Future deliverables include the cultural heritage chapters of the Environmental Impact Statement (EIS) and a cultural heritage management plan (CHMP).

Principal archaeologist, Karen Martin-Stone, and assistant archaeologist, Rebecca Mirams, commenced offsite consultation with Kungarakana and Warai people from 13 November 2018, and conducted the archaeological survey, 23-28 November. Onsite consultation commenced 5 December 2018, and continued until issues arose around FRALT access permits on 12 December. Offsite consultation continued throughout the wet season, influencing the design of Stage 3, and modifying the requirements for the rest of the archaeological assessment. Further survey of the Rum Jungle Creek South and southern borrow areas was conducted by Karen Martin-Stone over 5 days in May, June and July 2019, with Traditional Owner representation.

This report outlines the legislative basis for heritage protection, reviews the cultural and historical background of the project area, and provides recommendations for the management of archaeological places and objects identified during the survey.

The archaeological survey recorded 16 Aboriginal objects, 3 Aboriginal places, and 2 historical places, as defined under the NT *Heritage Act* 2011. The findings of the survey are consistent with predictive models of site distribution in the region, and tell us about past human occupation of the area.

Kim Bennett, for In Depth Archaeology, prepared maps for this report.



Figure 1: Project location

3.0 Legislative Basis for Heritage Protection

Cultural heritage conservation legislation is complicated in Australian jurisdictions. This is the result of the evolution of the Australian constitutional framework, particularly the inclusion of new themes, such as Aboriginality, heritage and the environment into an existing regulatory framework. The result of this developmental change is that the Commonwealth retains responsibility for Indigenous issues, including some cultural heritage issues, while the States and Territories retain control of land use and development control areas. Therefore, both Commonwealth and Northern Territory Acts apply in particular circumstances within the Northern Territory.

3.1 Commonwealth Acts

Aboriginal Land Rights (Northern Territory) Act 1976 (ALRA): The ALRA's primary purpose was to address land ownership issues for Indigenous Territorians who were confirmed as the Traditional Owners of lands. The Act provides a mechanism for creating a special type of freehold land – Aboriginal Land Trust. The Act also provides for the formation of Land Councils tasked with protecting the rights of all Aboriginal people in the NT, particularly in the areas of land claims under ALRA and the Native Title Act 1991. Under the Act, Land Councils are responsible for negotiating Land Use Agreements between Traditional Owners of Land Trusts and other stakeholders.

Native Title Act 1993: The Native Title Act gives some Aboriginal people the ability to access and use traditional lands for some purposes. Native Title claimants may enter into agreements with other interested parties, on the nature of land use and access to land, including the protection of cultural heritage resources. These agreements are known as Indigenous Land Use Agreements (ILUAs).

Aboriginal and Torres Strait Islander Heritage Protection Act 1984: This Act is a site protection Act of 'last resort', meaning that the Act is meant to provide emergency protection for Aboriginal and Torres Strait Islander heritage sites when all other avenues have been exhausted. Generally an Indigenous group must apply to the Minister to have protective covenants placed over an area or site. The power to provide such protection resides in Section 51 of the Constitution giving the Commonwealth powers on Aboriginal issues. Therefore this Act may override all State and Territory cultural heritage acts where there are conflicting provisions.

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act): The EPBC Act is the Commonwealth Government's main piece of environmental legislation. It provides a legal framework to manage significant natural and cultural heritage places. With regard to cultural heritage, the Act proscribes the criteria for listing National Heritage places and Commonwealth heritage places, and management principles for same.

The introduction of the EPBC Act created two new heritage registers, the National Heritage List, and the Commonwealth Heritage List. These registers replaced the Register of the National Estate.

- The National Heritage List is a list of natural, historic and Indigenous places that are of outstanding significance to the nation.
- The Commonwealth Heritage List is a list of natural, historic and Indigenous heritage places that are owned or controlled by the Australian Government.
- The Register of the National Estate is no longer a statutory list. It is being maintained as an archive of information about more than 13,000 places throughout Australia.

As the Commonwealth has no powers in regards to land use (other than on Commonwealth owned lands) the power emanating from the EPBC Act resides in the Commonwealth's powers to negotiate funding and other arrangements in relation to conservation of heritage places.

3.2 Northern Territory Acts

The NT Aboriginal Sacred Sites Act 1989 protects sites that are 'sacred and otherwise of significance in the Aboriginal Tradition'. Sacred Sites are protected whether the location of the sites are known or not by any person or company seeking to do work on lands. The Aboriginal Areas Protection Authority (AAPA) administers the Act. The AAPA can issue a Certificate indemnifying a proponent for an area upon application and payment of a fee. The Certificate may contain conditions limiting or preventing works in and around registered and recorded Sacred Sites. The Authority Certificate will contain maps outlining any restricted work areas in the area of application.

The NT *Heritage Act 2011* is the primary tool for managing cultural heritage in the NT. The Act establishes the Heritage Council and the Heritage Register, protects significant heritage places and objects, and sets penalties for offences against the Act. The Heritage Act provides 'blanket' protection for Aboriginal and Macassan archaeological places and objects, including human remains. There are penalties for accidental or deliberate destruction of these sites. The Act also sets the process by which other significant places or objects may be added to the Heritage Register, and afforded protection under the Act. The Act allows for processes to approve works and maintenance on a declared heritage place or object.

4.0 Cultural Background

4.1 Indigenous Occupation of the Top End

The arrival of modern humans onto continental Australia has been dated to at least 50,000 years BP (Before Present) (Roberts et al, 1990). These dates were obtained from samples taken from sites in Kakadu National Park, indicating broader occupation of the Top End region. Archaeologists believe that the most likely region of arrival was the Kimberley and Top End coast line. Much lower sea levels at the time, potentially due to periods of glacial maximum, meant that the earliest occupation sites are likely to be underwater.

The archaeological record shows very gradual change in material culture throughout this late Pleistocene period and into the mid-Holocene. The early stone tool industry is known as the 'Australian core tool and scraper tradition' (Flood 1995). It is characterised by large core tools, and steep-edged, chunky, high-backed scrapers (Flood 1995). Ground-edged axes first appear in the archaeological record at about 35,000 BP (Geneste et al 2010). By 23,000 BP, they are becoming more common in Kakadu while some feature waists for hafting (Flood 1995).

Rock art has been studied by archaeologists and a chronology of the art sequence of the Arnhem Land Plateau has been developed by George Chaloupka (1993). This chronology shows the development of discrete styles succeeding each other over time. The styles are correlated to environmental conditions as they changed over time; from pre-estuarine to estuarine to freshwater, and then to the historical era of contact with Makassan and European subjects (the Contact Period).

In the mid-Holocene, approximately 5,000 BP, an abrupt change occurs in the archaeological record with the introduction of the Australian small tool tradition and the subsequent arrival of the dingo approximately 4,000 BP (Flood 1995). The Australian small tool tradition is characterised by smaller, more delicate tools including backed blades, points, tulas and burren adzes.

It is possible that food processing technology for cycads (*Macrozamia* sp.) was developed during the Pleistocene, but there is more evidence suggesting it began or intensified from 4,500 BP (Flood 1995). Cycads are a highly toxic plant species, requiring specialised knowledge for food preparation. Their food value is exceptionally high and while the food preparation process is relatively intensive, it is possible to manage food supply through fire management to support large groups of people for weeks or months at a time (Flood 1995).

There are a number of theories that attempt to explain changes in the archaeological record (see Murray 1998; Lourandos 1997). One argues for ongoing cultural development in Australia while the other argues for waves of contact with people arriving from Asia. Most likely it is a combination of both but none-the-less it is clear that the first arrivals on the Australian continent must have made a water crossing. It is also clear that the dingo arrived from Asia and that the most likely explanation for this is that it was deliberately brought here by people.

4.2 Indigenous occupation of the Rum Jungle Mine Site area

We learn about Indigenous life in the local area through the sharing of Indigenous knowledge, and through archaeological and anthropological studies. Tangible and intangible heritage hold great value to Indigenous people, and provide a pathway to the broader community to learn about Indigenous culture and heritage.

Indigenous occupation of the Rum Jungle Mine area prior to the arrival of Europeans was broadly consistent with Indigenous occupation of the broader Top End region, described above, though of course local areas had their own particular cultural histories specific to their Traditional Owner groups. The Coomalie Shire area has been studied through the lens of resource economy, by Guse (1998). It is rich in resources and has been seasonally exploited in a fisher, hunter and gatherer economy. The richness of food resources enabled large groups of people to gather for ceremonial and other purposes. The seasonal pattern in the Coomalie region was for people to exploit freshwater wetlands and riverine areas during the dry season while exploiting upland areas during the wet. The relative abundance of fresh water enabled people to hunt game such as fish, kangaroos and goannas for example while also gathering plant resources; often the larger part of the traditional diet and which included cycads, palms, pandanus, long and cheeky yams and bamboo (Guse 1998).

4.2.1 Previous archaeological research

Previous archaeological work has been undertaken in the broader Coomalie area, including Martin-Stone's (2011) archaeological assessment of the former Rum Jungle Mine Site. Guse (1998) conducted a review of all archaeological research in the Coomalie Shire in 1998 for the Heritage Conservation Branch within the then NT Department of Lands, Planning and Environment. This review synthesised the work of Baker (1983), Megirian (1986), Mulvaney (1990), Hiscock (1991), Hiscock and Mitchell (1991 and 1992), Guse and Gregory (1994), Burns (1996), Guse (1993, 1994, 1996 and 1998) and Mitchell (1997). These surveys were usually clearance surveys done prior to the development of major works in the Top End, such as the new railway, gas pipelines and Telstra optic fibre cables. Guse's (1998) work analysed all known sites against landform, vegetation, geological and geomorphological units to develop a predictive model of Aboriginal archaeology in the shire.

Guse's predictive model states that:

- “2. There are five geomorphological provinces in the Coomalie Shire: Coastal Plains, Floodplains, Lowlands, Dissected Foothills and Dissected Uplands.
3. Artefact scatters are the most frequently occurring archaeological sites in the Coomalie region.
4. Archaeological sites are most frequently observed on Dissected Foothills and Dissected Upland terrain.
5. Archaeological sites most frequently occur on the Burrell Creek [shale, slate, phyllite, siltstone and greywacke], Gerowie Tuff [siltstone, phyllite and tuff] and Depot Creek Sandstone [pink orthoquartzite and quartz sandstone] geological formations.
6. Archaeological sites most frequently occur in association with vegetation unit 15 [*Eucalyptus tectifica*, *E. latifolia* woodland with Sorghum grassland, in varying densities with a variety of other overstorey species and a low sparse-shrub layer of mixed species].
7. Archaeological sites most frequently occur on the Baker [dissected uplands and isolated strike ridges of greywacke, sandstone and siltstone, with skeletal soils] and Rumwaggon [dissected foothills and intervening alluvial flats. Skeletal soils and loamy soils on hill slopes, alkaline soils on flats] land systems.” (Guse 1998:4)

More recently, Bourke (2001) and Heritage Surveys (2002) have undertaken archaeological surveys near Batchelor and Manton Dam. Additionally, Crassweller (2005, 2006a, 2006b, 2007, 2008a, 2008b, 2008c, 2008d and 2009) has undertaken surveys for the Brown's Oxide Project (HAR's) development adjacent to the former Rum Jungle mine site and other mine sites in the vicinity. All of the archaeological survey results are consistent with expectations of indigenous occupation of the area.

4.2.2 Previous anthropological research

Extensive anthropological research has been undertaken as part of the Finnis River Land Claim (Toohey 1981). The claimants over Area 4 of the land claim, which covers the former Rum Jungle Mine Site, were the Kungarakany and Warai clans. While acknowledging the close ties between the two groups (both as groups and individuals), Justice Toohey (1981) recognised that their presentation as joint claimants “tended to offer a picture of deceptive simplicity.” Independent analysis was required to ascertain land ownership and traditional ownership. Anthropological analysis was undertaken by Professor J.C. Goodale, Dr. R.H. Layton, Dr. P.J. Sutton, Dr. N.M. Williams and Professor B.L. Sansom (Toohey 1981).

Justice Toohey (1981:36) found; “[t]he historical material suggests that once this country was Warai rather than Kungarakany country but ... the movement of the Kungarakany from the area around the Wagait Reserve took them east to Adelaide River where over the years they have entered into a company relationship with the Warai. I accept that within Area 4 are places of spiritual significance to both Kungarakany and Warai. ... The place mentioned as of the greatest importance was Angurukulpan.”

Justice Toohey (1981:37) concluded; “I am satisfied that within Area 4 there are sites of importance. The Kungarakany and Warai claimants showed common spiritual affiliations to those sites, placing them under a primary spiritual responsibility for the sites and for the land.” He made findings of traditional ownership by the Kungarakany and Warai to Area 4 (Toohey 1981). Toohey (1981:49) was; “also satisfied that there is among those Kungarakany and Warai found to be traditional owners a strong traditional attachment, maintained despite the very great pressures of the last one hundred years.”

4.3 History of the Top End

For the past 140 years, the Darwin-Katherine region represents one of the most intensively occupied areas in the Northern Territory. Rum Jungle is centrally located within this region and as such, the development of the Rum Jungle area has been largely influenced by the economic, social and political history of the Darwin-Katherine region. Thus, it is important that the later assessment of heritage significance of the Rum Jungle mining is set against a backdrop of the Northern Territory's history. The history of the wider region has been well documented by Powell (2000) and Carment (1996). The following summary history of this region is compiled from these references with additional material specific to Batchelor and Rum Jungle being sourced from Barrie (1982).

European settlement in the area began with an expedition to the area by Fred Litchfield from the settlement at Escape Cliffs near the mouth of the Adelaide River (Guse 2006). The party mapped the escarpment country now named as Litchfield National Park and discovered the Finniss River which was named after the less than illustrious leader of the Escape Cliffs settlement, Boyle Travers Finniss. Litchfield also found gold in the Finniss, ensuring that the area would be visited and occupied shortly after permanent settlement.

The period from 1869 to 1890 has been considered as an economic boom period and perhaps the Northern Territory's most important period up until World War II. During this period, the Overland Telegraph Line (OTL) was established, gold fields and a railway to Pine Creek constructed, plantation agriculture attempted and pastoral country was settled and stocked with some venturing into the Arnhem and Alligator Rivers region (Powell 2000). This same period also saw the provision of a port facility and essential services such as postal, health, judicial and protective services on a peninsula in Darwin Harbour which became an economic and administrative centre for the Northern Territory. Port Darwin was declared a free port and in 1870, the Government Resident was instructed to establish "friendly relations with the natives, procedures for dealing with pastoral lands, the allotment of selections under land orders and the formation of experimental gardens" (Bauer 1964). The opening of the Pine Creek goldfields and the establishment of Katherine proved to be major centers drawing Aboriginal groups from far reaching areas including Arnhem Land.

The development of the mining and pearling industries and the growing domestic economy attracted migrants from China, Japan, the Philippines and the Malay Peninsula from which workers and families settled in Darwin. Also in Darwin, middle class Europeans managed to establish a social hierarchy which in turn segregated the locations that people settled in the township. This led to the demarcation of areas as being the white administration and residential zones, the establishment of a 'Chinatown' and shanty areas where the dispossessed Indigenous community resided.

In 1911, the administration of the Northern Territory was transferred from South Australia to the Commonwealth Government and the Township of Palmerston was renamed Darwin. From 1913, the Commonwealth Government through its Northern Territory administration, applied a policy of 'control and segregation' of Aboriginal people. This in particular affected Aboriginal groups close to the Darwin - Katherine region. Aboriginal groups were required to live in close proximity in settlements despite the long standing taboos, alliances or intergroup hostility.

An influx of defence personnel in the 1930's saw the population of Darwin increase from a few thousand to approximately 15,000 by the outbreak of hostilities in 1942. Additionally, World War II developments from 1939 to 1945 had a significant impact on the development of Darwin and surrounding regions. Major developments included the construction of the Stuart Highway in 1941 and the air force airstrips, the stationing of large numbers of military personnel and use of the Darwin Harbour for naval purposes (Powell 2000).

Batchelor became the base for the Australian, American and Netherlands East Indies forces from 1942 to 1945. The Batchelor Demonstration Farm was commandeered by the Commonwealth Government in July 1941 and the existing airfield was upgraded. During the war, numerous air attacks, reconnaissance and supply drops were launched from the Batchelor air field. Thousands of troops were stationed in the area and training was conducted locally. Batchelor was subjected to air raids by the Japanese between October 1942 and November 1943, resulting in a small number of wounded personnel (Barrie 1982).

Destruction has also been as significant in the history of Top End as has economic development. Cyclones in 1897 and 1937 caused much damage and rebuilding. World War II was also a period of destruction and rebuilding. Much of the debris left over from WWII was not dealt with until after 1951. This post-war period saw the rebuilding of Darwin resulting

in the loss of much of Darwin's pre-war character (Dewar 2010). Then in December 1974, Cyclone Tracey had a catastrophic impact on the appearance and development of Darwin and associated industry in the following decades.

4.4 The uranium industry in Australia

The timing of uranium as a major world commodity was established with the entry into the nuclear age with the development of atomic weapons in World War II. According to Barter (1991), the uranium industry largely arose in order to satisfy demand created from the defence programs of the United States (US), the United Kingdom (UK), the Soviet Union and France in the Cold War period. Great Britain and the US believed that uranium was in short supply and wanted it not only for their own arsenals, but to deny the source to other competitors (Cawte 1992). Therefore, the UK and the US through the Combined Development Authority (CDA), sought contracts for the future outputs of Australia's uranium mineral sources (Cawte 1992).

Since World War II, there have been two significant periods of uranium mining in Australia. The first period of uranium exploration and production began in earnest in 1954 with mining undertaken at Radium Hill (SA), Rum Jungle (NT), Mary Kathleen (QLD) and a number of smaller mines in the South Alligator Valley (NT) (Australian Atomic Energy Commission 1962).

It was during this period that amendments were made to the Mining and Aboriginal Ordinances to allow exploration and mining on Aboriginal reserves which was previously excluded (Cawte 1992). Philosophies of protection of Aborigines began to change to assimilation with the promotion that Aboriginal reserves could become economically self sufficient through the development of mining and subsequent royalties (Cawte 1992).

It was not until the 1970s when nuclear power was developed as an alternative energy source that uranium was once again needed in large quantities and exploration and mining of uranium was back on the Australian agenda. The second phase of uranium mining which began in the late 1970s and early 1980s saw uranium mines established at Ranger and Nabarlek in the NT and Roxby Downs in SA.

According to Cawte (1992), over a 15 year period beginning from 1945, Australia sought to be included amongst the nuclear weapon possessing countries of the world. Both the UK and the US did much to deter Australia from developing beyond being a provider of uranium oxide ore (Cawte 1992). Australia did manage however, to secure access to the technology to proceed with the development of the nation's own nuclear energy program by 1956 through the hosting of tests and sale of uranium (Cawte 1992).

The Australian Commonwealth Government established a tax free reward scheme for the discovery of uranium deposits of economic significance offering up to £25,000 (Barrie 1982). A total of £112,000 was paid during the lifetime of the scheme from 1948 to 1961 to 35 individual prospectors, syndicates and companies (Barter 1995). Over half of this scheme was paid to discoveries in the Northern Territory.

The Commonwealth reward scheme and the significant Rum Jungle discoveries initiated a major prospecting boom in the Northern Territory. During the post-war period, uranium production was driven by demand for weapons systems and accordingly, was granted a level of secrecy. Therefore, production figures were not always reported in public documentation at the time. Barter (1995) estimates the uranium mining value to the Northern Territory varied between £2.03 million in 1954/55 to £7.61 million in 1963/64 adding significantly to the previously underestimated mining production of Northern Territory's economic statistics. Barter (1995) goes on to state that 43% of the Northern Territory workforce between 1954 and 1964 was engaged in the mining industry and specifically mining uranium.

4.5 History of Rum Jungle Mine

In the late 1940s, the Commonwealth began offering rewards for the discovery of uranium ores in Australia (Barrie 1982). Uranium had been located and mined in Australia as early as 1906 at Radium Hill in South Australia, however the new market following WWII and the Commonwealth rewards scheme encouraged prospecting in a number of regional centres including Darwin (Australian Atomic Energy Commission 1962). John (Jack) Michael White informed the government of the deposit in 1949, eventually claiming the full reward of £25,000 (Barrie 1982). The Bureau of Mineral Resources undertook further exploration work from 1949 to 1952 (Barrie 1982).

The Rum Jungle uranium deposit was quickly identified as a commercial possibility and work began to develop a mine in 1952. The mine operated from 1953 to 1963, and produced uranium, copper, nickel, zinc and lead. The mine was operated by Territory Enterprises Pty Ltd (TEP), a wholly-owned subsidiary of Consolidated Zinc Pty Ltd, which merged with Rio Tinto Mining Company of Australia Ltd to form Conzinc Riotinto of Australia Ltd (CRA) in 1962. The mine initially comprised White's underground, which was converted to an open cut pit (see Fig. 2).

Two more open cut pits were established within the lease area; Dyson's and Intermediate. White's open cut was mined for all uranium, copper, nickel, zinc and lead ores, while Dyson's only produced uranium and Intermediate only produced copper (Kraatz and Applegate 1992). The onsite treatment plant was also used to process ore from other mines which continued until 1971.

Monitoring of the environmental impact from the mine began in the late 1960s with a more detailed study being conducted in the mid-1970s (Davy 1975). A comprehensive clean-up project took place over four years; from 1982 to 1986 with subsequent monitoring being conducted up until at least 2002 (Taylor, et al 2003). Although at the time of the 1980s works the rehabilitation objectives were deemed to have been achieved, more recent studies have documented the gradual deterioration of the original rehabilitation works (Taylor et al. 2003).

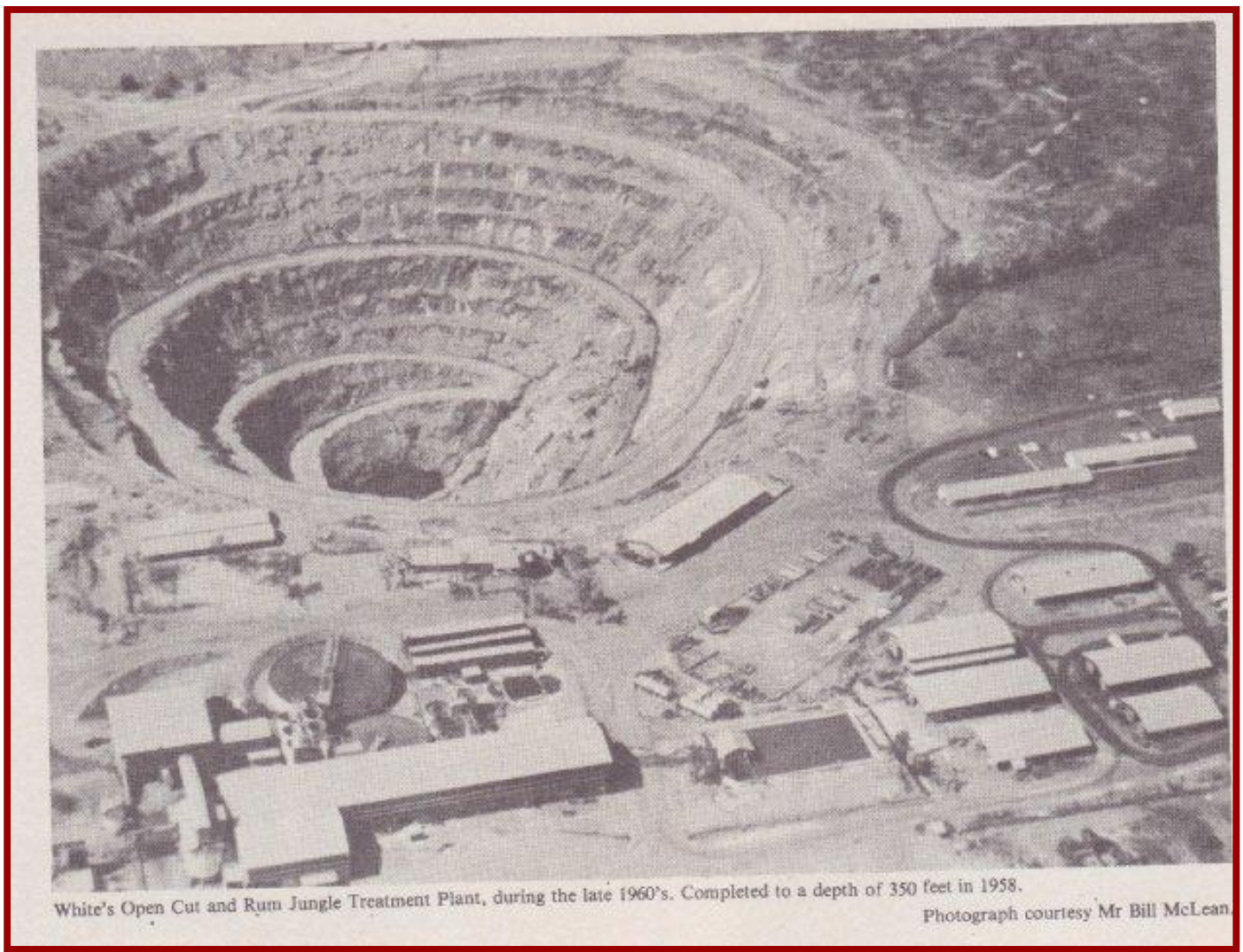


Figure 2. White's Open Cut, late 1960s (Barrie 1982).

5.0 Methodology

The archaeological assessment commenced with pre-survey consultation with available Traditional Owners. The consultant was engaged by DPIR in mid-November 2018, which put pressure on the available timeframe to complete the archaeological survey before wet season vegetation growth rendered surface visibility too poor to allow an adequate assessment. While it is ideal to be accompanied by cultural monitors in the field, the Northern Land Council had been unable to provide confirmation of who the appropriate Kungarakan and Warai decision makers are. The consultant was also concerned about the prospect of recording sites in area with people who may not be the agreed custodians for that country, and the potential for increasing stress on Traditional Owner groups. The consultant decided to meet with as many Traditional Owners as were available in the short timeframe before survey, to take on board any concerns and issues. The consultant and assistant archaeologist then completed the archaeological survey, and commenced onsite consultation with Kungarakan and Warai people. This approach was chosen so that everybody could be given the same information and given unimpeded opportunity to have their say about the findings.

Prior to starting the survey, the consultant was advised by DPIR that all approvals were in place to conduct the archaeological survey. Principal archaeologist, Karen Martin-Stone, and assistant archaeologist, Rebecca Mirams, conducted the survey from 23-28 November, covering the mine lease, Mt Burton, Mt Fitch, power line alignment, potential haul road and potential borrow locations. Some onsite consultation was conducted from 5-11 December, before issues were raised about permits. It was agreed to continue discussions with Traditional Owners and suspend further access to Land Trust land until these issues could be sorted out.

The archaeological survey aimed to locate and record any archaeological places or objects, as defined by the NT *Heritage Act* 2011, within a reasonable sample of the predominant landforms. The archaeological survey used purposive sampling, with a particular focus on areas of proposed disturbance, taking into account the predictive model for site distribution in the Coomalie region (Guse, 1998, see 4.2.1 above). These methods are in accordance with standard practice for field archaeology (see Burke & Smith, 2004:68).

Following the late 2018 survey, consultation meetings with Traditional Owners indicated a strong need to refine the approach to locating borrow material, ruling out the previously proposed haul road, and borrow areas near Woodcutters and on private land adjoining the mine lease. Following extensive discussions and revised design work, areas to the immediate south of the mine lease and around Rum Jungle Lake were investigated as potential borrow material locations. Karen Martin-Stone conducted an archaeological survey of these locations over five days in May, June and July, with Mitchell Thompson (DPIR) and Traditional Owner representatives, Georgina Yates, Helen Bishop and Tony Bishop.

5.1 Identification of archaeological places and objects

Archaeological places and objects are otherwise referred to as sites and artefacts. There are many different site types commonly found in Australian archaeology (Burke & Smith 2004, Pearson & Sullivan 1995). Common site types found across the Northern Territory are:

- **artefact scatters:** These may contain flaked or ground stone artefacts and hearthstones. They may occur as stratified deposits or surface scatters of artefacts.
- **shell middens:** These sites are usually mounds of discarded shell and other artefacts, associated with coastal occupation. The mounds can be quite large – 8m tall middens have been recorded in the Northern Territory.
- **rock art sites and shelters:** These sites may contain paintings, stencils or engraved art, along with artefacts indicating occupation.
- **stone arrangements:** These sites exhibit the deliberate construction of cairns, lines or polygons with stone. They may be small, such as a single cairn, or large and complex, covering hundreds of metres.
- **quarries of stone and ochre:** These sites are generally locations where outcropping stone has been flaked for the removal of material used to make stone tools. The sites can occur on very small outcrops, or as major industrial complexes at the centre of vast trading networks.
- **burials:** These sites include human remains in all forms of burial practice, including interment, exposure and the depositing of remains in rock shelters.
- **isolated stone artefacts:** These artefacts occur as background scatter across the landscape, and are integral to understanding the patterns of occupation, as well as trade networks and other past life ways.

- **culturally modified trees:** These trees have been scarred or felled in activities ranging from accessing food sources (e.g. honey), or the manufacture of wooden artefacts including didgeridoos, bark canoes, and food containers.
- **built heritage,** including industrial and maritime sites, and
- **isolated historical artefacts,** commonly made of metal, glass or ceramic.

5.2 Information management

The location of all archaeological features was recorded using a handheld Garmin GPS62s unit, in UTM GDA94, Zone 52. Kim Bennett provided mapping services for In Depth Archaeology. Standardised site recording forms, adapted from Burke & Smith (2004), were used to record the details of the sites. The archaeological features were given identification numbers to correspond with the date and time of recording, to match with photo metadata.

5.3 Register searches

The consultant searched the following registers for known sites protected under various legislation.

The **National Heritage List** is Australia's list of natural and cultural places of outstanding significance to the nation. There are no sites in the survey area registered on the National Heritage List.

The **Commonwealth Heritage List** is a list of natural and cultural places owned or controlled by the Australian Government. There are no sites in the survey area registered on the Commonwealth Heritage list.

The **Register of the National Estate** is a non-statutory list that expired with the introduction of the Commonwealth EPBC Act. There are no sites in the survey area listed on the Register of the National Estate.

The **Northern Territory Heritage Register** is the NT's statutory list of heritage places and objects that are of significance to the NT. There are no places or objects in the survey area listed on the NT Heritage Register, however Rum Jungle Uranium Mines were nominated in 2001 and considered in 2005. The Heritage Advisory Council decided against recommending the mining areas to the Minister for heritage declaration.

NT Heritage Branch searched the **Northern Territory Archaeological Sites Database** on behalf of the consultant. This database includes archaeological places and objects that have been recorded during similar surveys, however it may not reflect the most current data. The recorded places and objects are shown in Fig. 3, below.

Figure 3: Places and objects recorded on the NT Archaeological Sites Database – redacted

6.0 Consultation

Consultation with Traditional Owners and Custodians has been a key part of the archaeological assessment process. While it has come with some unavoidable challenges, the consultant, the Department and the Northern Land Council have worked together with Traditional Owners and Custodians to reach the best possible outcomes.

The NLC is the statutory organisation responsible for identifying who the Traditional Owners are that speak for country, and for formalising a decision making process that works for the Traditional Owner groups. They are now in the process of completing this, and have engaged consultation anthropologist, Gareth Lewis, to assist. Throughout, the NLC have facilitated many project meetings, where the Department and In Depth Archaeology have had the opportunity to share information with Traditional Owner groups and engage with them to better understand their concerns.

The Department engaged the consultant in mid-November 2018, which left a very short window for pre-survey consultation with Traditional Owners. This caused understandable frustration for some people, and meant that many were unavailable for the pre-survey or onsite consultation at that time.

During the post-initial-survey onsite consultation, information came to light about the lack of appropriate permits to access Finnis River Aboriginal Land Trust land. This had resulted from a miscommunication between the NLC, the Department and the consultant. The consultant and the Department have apologised for this error, and worked closely with Traditional Owners and the NLC to ensure that appropriate permits were in place before any future access.

Despite these initial issues, the consultation has achieved a broad level of engagement amongst the Traditional Owner groups. Many issues have been discussed, and Traditional Owner input has shaped the design of the rehabilitation project, to better reflect their cultural values and priorities.

The regulatory environment of cultural heritage management in the Northern Territory introduces some challenges to completing works in a linear progression. Sacred sites and archaeology are separately protected under different legislation. This creates a two part process, where anthropologists deal with sacred sites, which is overseen by the Aboriginal Areas Protection Authority (AAPA); and archaeologists deal with archaeological places and objects, which is overseen by the Heritage Branch, within the NT Department of Tourism, Sport and Culture. For most projects, the design is finalised first, the AAPA certificate is finalised on the basis of the design, and then archaeological survey identifies any archaeological material at risk from the proposed works. This project is more complex than that, because of the restricted timeline for completion of the EIS, the incorporation of stakeholder feedback into design options, technical works that needed to be completed to feed information into the design, and archaeological survey that needed to be done prior to ground disturbance in any technical works. These multiple feedback loops required archaeological and other works to be done in parallel. The process of cultural heritage management for Stage 2A has therefore been an ongoing process of consultation with Traditional Owners as further information feeds into the design options.

In addition to this archaeological assessment report, In Depth Archaeology will develop the historical and cultural heritage chapter of the EIS, and the Cultural Heritage Management Plan (CHMP).

A summary of consultation efforts is outlined below.

Prior to the archaeological survey, the consultant was provided with a list of stakeholders by the Department. The list had been prepared by Grant Sarra, a consultant who had been working with Traditional Owners on the project. In Depth Archaeology connected with the following stakeholders between 15-22 November, in addition to leaving messages for many others.

Kungarakan:

Helen Bishop (in person)
Sue Stanton (in person)
Rikki McCallum (in person)
Kathy Mills (in person)
Margetta Avlonitis (in person)
Lenore Dembski (in person)
Thom Calma (in person)
Alice Calma (in person)

Buddy Ahmat (phone)
Bruce Delahunty (phone)
Patricia McGregor (in person)
Mary-Anne Ryan (in person)
Deborah McGregor (in person)

Warai:

Phillip Goodman (in person)
Georgina Yates (in person)
George Yates (in person)

Karen Martin-Stone and Rebecca Mirams conducted the archaeological survey, 23-28 November. During this time, Karen also continued to attempt to connect with Traditional Owners from the Calma and Kenyon families, and to try to source contact details for the Hazelbane family.

Following the initial field survey, Karen Martin-Stone engaged with the following people for onsite consultation: Rhonda Calma (5 & 6 December); Margetta Avlonitis, Trudy Avlonitis & Buddy Ahmat (7 December); Phillip Goodman (9 December); and David George Yates Snr, Christine Thompson, Kathleen Thomsen & Denzel Yates (11 December).

On 8 December, Karen Martin-Stone spoke at the meeting organized by Margetta Avlonitis, which was attended by many within the McGuinness / McGuinness family. On 12 December, Karen had multiple phone calls with Rhonda Calma. On 13 December, the consultant met with Rhonda Calma, Lenore Dembski, Tyrone Watson and Graham Farrer, 6pm-10:30pm. It was decided to continue onsite consultation with stakeholders after Christmas. The consultant also met Phillip Goodman and Graham Farrer on 12 January, and with Rhonda Calma, Lenore Dembski, Tyrone Watson, Virginia Leitch (Commonwealth) and Graham Farrer at DPIR on 14 January. On Monday 21 January, the consultant was onsite with Rhonda Calma doing more consultation. That evening, Rhonda and I met with Graham Farrer and Lenore Dembski.

The NLC co-ordinated a number of consultation meetings to discuss progress on the project and design considerations. The consultant was involved in the following meetings:

15 January: Warai
17 January: McGregor / Verburg
19 January: McGuinness / McGuinness
13 March: Warai
15 March: McGregor / Verburg
18 March: McGuinness / McGuinness
7 May: McGuinness / McGuinness
8 May: McGregor / Verburg
9 May: Warai

The May meetings included a site visit, and looked at the palimpsest site that was recorded in 2010, which requires erosion control measures to prevent further degradation of the site.

The consultant separately met with Rikki McCallum, Rena Stanton, Graham Farrer, Virginia Leitch on 16 January, as the Stantons did not wish to attend NLC meetings. A site meeting was held on 26 March, with the Department, NLC and McGregor / Verburg family.

In addition to the meetings, the consultant has kept in regular phone contact with Traditional Owners who wished to discuss their concerns.

For the archaeological survey of Rum Jungle Creek South, Karen Martin-Stone was accompanied by Georgina Yates and Helen Bishop. For the survey of the southern borrow area, the consultant was accompanied by Helen Bishop and Tony Bishop.

Key areas of Traditional Owner concerns are protecting areas of high cultural value; ensuring the appropriate people speak for country; ensuring land access is managed according to cultural protocols; understanding the detail of proposed

works, and its potential impacts; and having access to economic opportunity throughout Stage 2A and Stage 3, at every chance.

Figure 4: Distribution of sites over 1952 aerial imagery of pre-mining landscape - redacted

7.0 Results and Discussion

The 2010 archaeological survey focused on the Rum Jungle mine lease, and recorded 12 Aboriginal places, 11 Aboriginal objects, 17 historical places and one historical object (Martin-Stone & Wesley, 2011). The 2018 archaeological survey focused on condition reporting the 2010 findings, where possible, and recording any Aboriginal or historic places and objects located in the additional areas proposed within Stage 2A. Most of the recorded Aboriginal heritage places could not be revisited, due to the density of gamba grass. Some additional historical places (dry stone walls) were found in the vicinity of others recorded in 2010, as visibility differed. It must be noted that both the 2010 and 2018 surveys were scheduled in the late build up period, hampering visibility. It is possible that some sites may have been missed due to these less than ideal survey conditions, however the proposed Cultural Heritage Management Plan will put in place procedures for better defining the boundaries of known sites and for identifying unrecorded sites throughout the life of the project.

The palimpsest site recorded in 2010 was at that stage suffering the effects of erosion, due to runoff from the main waste rock dump (Martin-Stone and Guse 2011). Erosion control measures have not yet been put in place, and are recommended to minimise any further impact on this significant site. The difference of 8 years of erosion can be seen in Fig. 5.



Figure 5: The palimpsest site in 2010 (left) and 2018 (right) showing gully erosion

7.1 Summary of 2018 survey results

The 2018 archaeological survey recorded 16 Aboriginal objects, 3 Aboriginal places and 2 historical places. The difference between an Aboriginal place and an Aboriginal object is how they are identified and managed under the NT *Heritage Act* 2011. An Aboriginal place is recorded when the density of artefacts indicate it was a site, as opposed to background scatter of individual artefacts.

It is important to note that, due to low surface visibility during the survey, many of the Aboriginal objects recorded in 2018 may indeed be part of larger Aboriginal places. The consultant recommends a more thorough survey in conditions of better visibility, where the finalised Stage 3 design may warrant a more detailed understanding.

Furthermore, it is important to note that all Aboriginal archaeological places and objects are automatically protected by the *Heritage Act* and there are penalties for unauthorised disturbance. It is possible to make an application for works in an Aboriginal place or on an Aboriginal object under the Act.

The results of the 2018 survey are summarised in Table 1 and Figure 6. The results for each area of interest are detailed separately below. Overall, the results of the survey conform to the expectations of the predictive model (Guse 1998) for site distribution in the Coomalie region.

Table 1: Summary of 2018 survey results

ID	Easting	Northing	Category	Site type / features	Brief Description
201811231140	Redacted	Redacted	Aboriginal object	Isolated artefact	Quartz bifacial point, broken.
201811231204	Redacted	Redacted	Aboriginal object	Isolated artefact	Broken quartz flake (distal break).
201811231210	Redacted	Redacted	Aboriginal object	Isolated artefact	Unifacial point with proximal and distal breaks
201811231250	Redacted	Redacted	Aboriginal object	Isolated artefact	Silcrete flake with diagonal medial break (distal end missing).
201811231300	Redacted	Redacted	Aboriginal object	Isolated artefact	Basic quartz flake, no retouch.
201811231315	Redacted	Redacted	Aboriginal object	Isolated artefact	Quartz bifacial point, broken.
201811231520	Redacted	Redacted	Aboriginal object	Isolated artefact	Multiplatform quartz core found on ridge.
201811241500	Redacted	Redacted	Aboriginal object	Isolated artefact	2x quartz flakes, one broken, on granite outcrop.
201811250905	Redacted	Redacted	Aboriginal object	Isolated artefact	Two isolated artefacts. Broken flake and thumbnail flake, both quartz.
201811281050	Redacted	Redacted	Aboriginal object	Isolated artefact	Quartz bifacial point.
201811281115	Redacted	Redacted	Aboriginal object	Isolated artefact	Quartz unifacial point.
201811281220	Redacted	Redacted	Aboriginal object	Isolated artefact	Quartz bifacial point, broken.
201811281400	Redacted	Redacted	Aboriginal object	Isolated artefact	Quartz bifacial point, broken.
201811281410	Redacted	Redacted	Aboriginal object	Isolated artefact	Quartz bifacial point, broken.
201811241430	Redacted	Redacted	Aboriginal place	Stone artefact scatter	4x broken quartz flakes within 2m.
201811281415	Redacted	Redacted	Aboriginal place	Stone artefact scatter	Stone artefact scatter on gravel surface on ridge.
201811281435	Redacted	Redacted	Aboriginal place	Stone artefact scatter	4 artefacts within 1 square metre. 50m from waterhole with known quarry on the other side.
201811231515	Redacted	Redacted	Historical place	Dry stone wall	Probable WWII era dry stone wall. Large boulders used to create wall.
201811231555	Redacted	Redacted	Historical place	Dry stone wall	U-shaped, with L-shape between natural features.

Figure 6: Distribution of sites recorded in 2010 and 2018 archaeological survey – redacted

Figure 7: Sites recorded in the vicinity of the mine lease, 2010 and 2018 survey - redacted

7.2 Newly recorded sites within the Rum Jungle mine lease – historical

Detail of Aboriginal places and objects has been redacted to protect culturally sensitive information. The location of the WWII sites has been redacted to prevent any unauthorised or inadvertent disturbance of Aboriginal heritage in the same location.

While condition reporting previously recorded heritage places in the mine lease, the consultants encountered further undocumented historical and Aboriginal heritage that had not been visible to consultants in 2010. These two historical places and one Aboriginal object add support to the recommendation that the area should be surveyed in conditions of greater visibility, as it is probable that it is a contiguous Aboriginal site overlaid by subsequent WWII activity that should be recorded within its full context. The new findings are described in Table 2, below, and can be seen on the map in Figure 7, above.

The previously recorded drill rig was reassessed for significance by the curator of Territory History at the Museum and Art Gallery of the Northern Territory (Archibald, 2019). It was identified as an Ingersoll-Rand Quarrymaster blasthole drill rig dating from the 1950s, and the evidence suggests that this rig was used in the construction of the pits on site.

Table 2: Newly recorded heritage within the Rum Jungle mine lease

ID	Easting	Northing	Category	Site type / features	Description
201811231515	Redacted	Redacted	Historical place	Dry stone wall	Probable WWII era dry stone wall, in close proximity to previously recorded WWII sites. Large boulders used to create wall.
201811231555	Redacted	Redacted	Historical place	Dry stone wall	U-shaped, with L-shape between natural features. In close proximity to previously recorded WWII sites. 2.6m x 2m. Large boulders (50cm x 70cm) used to create wall.



Figure 8 a & b: WWII dry stone wall (201811231555)



8.0 Significance Assessment

8.1 Significance assessment

The assessment of significance of archaeological places and objects is mandated by the *Heritage Act* 2011 and is a highly useful tool in making decisions regarding the management of cultural heritage. This report separately documents two types of significance: **cultural significance** (as documented in discussions with Traditional Owners and custodians), and **archaeological significance** (assessed according to the criteria under Section 11 of the Act).

The heritage assessment criteria for a place or object (archaeological significance) are as follows:

- whether it is important to the course, or pattern, of the Territory's cultural or natural history;
- whether it possesses uncommon, rare or endangered aspects of the Territory's cultural or natural history;
- whether it has potential to yield information that will contribute to an understanding of the Territory's cultural or natural history;
- whether it is important in demonstrating the principal characteristics of a class of cultural or natural places or environments;
- whether it is important in exhibiting particular aesthetic characteristics;
- whether it is important in demonstrating a high degree of creative or technical achievement during a particular period;
- whether it has a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons, including the significance of a place to Aboriginal people as part of their continuing and developing cultural traditions; or
- whether it has a special association with the life or works of a person, or group of persons, of importance in the Territory's history.

All archaeological places and objects recorded during the course of surveys are assessed for their significance according to these criteria. In some cases, cultural significance and archaeological significance may differ, and the management recommendation takes into account both kinds of significance.

Table 8 summarises the assessed significance of places and objects recorded during the 2018 archaeological survey.

8.2 Significance of Aboriginal places

The Aboriginal places recorded during the 2018 archaeological survey have high cultural significance to the Traditional Owners and custodians. When assessing their significance according to the criteria under S11 of the *Heritage Act*, the consultant concluded that they are significant for the following reasons:

- The variation within and between sites in terms of artefact material, type and function can tell us about the course and pattern of Aboriginal occupation of the area. They are therefore important to the course of the Territory's cultural history.
- A more detailed understanding of these places has the potential to yield information that will contribute to our understanding of the Territory's cultural history.
- The places have a strong association with the Kungarakana and Warai Traditional Owners, for cultural and spiritual reasons. More detailed understanding of these Aboriginal places has the potential to reveal stronger connections between the lifeways of the old people and their sacred sites.

The Aboriginal places have been assessed as having high cultural significance and moderate archaeological significance on an individual basis. Collectively, the Aboriginal places represent an archaeological landscape of moderate significance.

8.3 Significance of Aboriginal objects

The Aboriginal objects documented in this report were mostly recorded in conditions of low visibility, and had a high probability of being Aboriginal places (more extensive sites). Working with this in mind, the objects were assessed for their potential significance in that context. The consultant concluded that they are significant for the following reasons:

- The patterning of artefact material, type and function across the landscape and within and between potentially larger sites can tell us about the course and pattern of Aboriginal occupation of the area. They are therefore important to the course of the Territory's cultural history.
- One of the Aboriginal objects (201811231250) is of a raw material rarely seen in the Top End. It therefore possesses rare aspects of the Territory's cultural history.
- A more detailed understanding of these objects and potential places has the potential to yield information that will contribute to our understanding of the Territory's cultural history.
- The objects have a strong association with the Kungarakana and Warai Traditional Owners, for cultural and spiritual reasons. More detailed understanding of these Aboriginal objects has the potential to reveal stronger connections between the lifeways of the old people and their sacred sites.

The Aboriginal objects have been assessed as having high cultural significance and moderate archaeological significance on an individual basis. Collectively, the Aboriginal objects represent an archaeological landscape of moderate significance.

8.4 Significance of historical places

The archaeological survey recorded two dry stone walls, on a ridge amongst a complex of previously recorded gun emplacements and dry stone walls, from the WWII era. The significance of these historical places has been assessed individually, but should also be considered within the broader context of the entire ridge, through survey in conditions of better visibility.

The cultural significance of the historical places was not assessed, as there was no communication with particular community groups who may be stakeholders for the places. The archaeological significance was assessed according to the remaining criteria under the Act. The historical places were both assessed as being of moderate significance for the following reasons:

- As a probable single-use field training site for WWII personnel, the places are important to the course of Northern Territory cultural history.
- Single use sites of this kind are uncommon across the Territory landscape.
- Further research into the places has the potential to inform our understanding of this aspect of the Territory's WWII history.

8.5 Significance of historical object

The Ingersoll-Rand Quarrymaster blasthole drill rig has been assessed against the criteria. The consultant concluded that it is significant for the following reasons.

- It is important to the course of Northern Territory cultural history, as a tangible remnant of the Commonwealth government's mining activity on land later assessed as Aboriginal Land.
- It possesses uncommon aspects of the Northern Territory's cultural history, as a rare example of an intact blasthole rig.
- Further research on the object has the potential to yield information that will contribute to our understanding of Rum Jungle mining history.
- It may demonstrate a high degree of technical achievement for the period.

Table 3: Summary of significance assessment of heritage places and objects

ID	Easting	Northing	Category	Cultural significance	Archaeological significance	Recommendation
201811231140	Redacted	Redacted	Aboriginal object	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201811231204	Redacted	Redacted	Aboriginal object	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201811231210	Redacted	Redacted	Aboriginal object	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201811231250	Redacted	Redacted	Aboriginal object	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201811231300	Redacted	Redacted	Aboriginal object	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201811231315	Redacted	Redacted	Aboriginal object	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201811231520	Redacted	Redacted	Aboriginal object	High	Moderate	Apply a 100m conservation buffer. Record in better visibility.
201811241500	Redacted	Redacted	Aboriginal object	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201811250905	Redacted	Redacted	Aboriginal object	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201811281050	Redacted	Redacted	Aboriginal object	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201811281115	Redacted	Redacted	Aboriginal object	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201811281220	Redacted	Redacted	Aboriginal object	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201811281400	Redacted	Redacted	Aboriginal object	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201811281410	Redacted	Redacted	Aboriginal object	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201907061240	Redacted	Redacted	Aboriginal object	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201907171515	Redacted	Redacted	Aboriginal object	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201811241430	Redacted	Redacted	Aboriginal	High	Moderate	Apply a 100m conservation buffer.

			place			Record in better visibility, if necessary.
201811281415	Redacted	Redacted	Aboriginal place	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201811281435	Redacted	Redacted	Aboriginal place	High	Moderate	Apply a 100m conservation buffer. Record in better visibility, if necessary.
201811231515	Redacted	Redacted	Historical place	Not assessed	Moderate	Apply a 100m conservation buffer. Record in better visibility.
201811231555	Redacted	Redacted	Historical place	Not assessed	Moderate	Apply a 100m conservation buffer. Record in better visibility.
N/A	Not recorded	Not recorded	Historical object	Not assessed	Moderate	This object should be conserved. It may be moved from its current location to a more appropriate local position for its ongoing preservation and interpretation.

9.0 Recommendations

Taking into account the survey results and associated significance assessment, the consultant makes the following recommendations:

1. That ongoing stakeholder consultation includes input from all Kungarakan and Warai people who wish to be engaged in the process, and that decision making occurs within an agreed Stakeholder Engagement framework and decision making process.
2. That the conditions of the Authority Certificate for sacred sites be upheld at all times.
3. That all appropriate access / permit procedures are followed for access to Finnis River Aboriginal Land Trust.
4. That a 100m conservation buffer be applied to all identified Aboriginal places and objects.
5. That erosion control measures be put in place for the palimpsest site, in consultation with Traditional Owners.
6. That the significant historical places and object (WWII sites and drill rig) be preserved.
7. That further archaeological survey in conditions of better visibility be conducted to properly document archaeological materials, where necessary.
8. That the Department provides a cultural heritage induction to all staff and contractors working in the project area, which includes types of heritage materials of which to be aware, and penalties for disturbance.
9. That if staff or contractors encounter suspected Aboriginal heritage materials during the course of works, disturbance of the area should cease and further advice be sought from the consultant and Traditional Owners.
10. That a Cultural Heritage Management Plan be developed to formalise the implementation of these recommendations.

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